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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,555	02/26/2004	Masaaki Takata	249353US3	3248

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

LUND, JEFFRIE ROBERT

ART UNIT	PAPER NUMBER
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1763

NOTIFICATION DATE	DELIVERY MODE
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07/12/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/786,555	TAKATA ET AL	
	Examiner	Art Unit	
	Jeffrie R. Lund	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/31/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiozawa, JP 04-134815 A in view of Beatty et al, US Patent 6,692,249 B1.

Shiozawa teaches a thermal treatment system that includes an outer tube 1 made of silicon oxide that has a closed upper portion; an open lower portion; and a flange formed on an outer peripheral side of the lower portion. The lower portion has a tapered portion 12 so as to expand a diameter thereof toward the lower end. (See figures 1-3)

Shiozawa differs from the present invention in that Shiozawa does not teach the

body is made out of silicon carbide or the specific dimensions of the outer tube (i.e. size, radii of curvature, surface roughness, etc).

Beatty et al teaches a thermal treatment apparatus that includes an outer tube 12 made of silicon carbide.

Providing dimensions for an apparatus is a fundamental engineering skill and is part of applying the disclosures of patents, which rarely give specific dimensions. Furthermore, it was held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. (Also see MPEP 2144.04.IV.A) If the apparatus of Shiozawa were made to the dimensions taught in the specification, it would have all of the claimed ratios.

The motivation for making the outer tube of Shiozawa out of silicon carbide is to provide an alternate material of construction as taught by Beatty et al. Furthermore, it has been held that: the selection of a known material based on its suitability for its intended use is prima facie obviousness (*Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945)); and reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig-saw puzzle (325 U.S. at 335, 65 USPQ at 301).

The motivation for making the apparatus of Shiozawa to the specific dimensions

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of the specification is to provide specific dimensions from which to manufacture the apparatus of Shiozawa as required by Shiozawa.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the outer tube of Shiozawa out of silicon carbide as taught by Beatty et al, and to provide specific dimension from which to manufacture the apparatus of Shiozawa.

4. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beatty et al, US Patent 6,692,249 B1.

Beatty et al teaches a thermal treatment system that includes an outer tube 12 made of silicon carbide that has a closed upper portion; an open lower portion; and a flange formed on an outer peripheral side of the lower portion. The lower portion has a tapered portion so as to expand a diameter thereof toward the lower end. (See figures 1-3) For clarity the Examiner has attached a blown up portion of figure 2, which is similar to figures 1 and 3.

Beatty et al differs from the present invention in that Beatty et al does not teach specific dimensions of the outer tube (i.e. size, radii of curvature, surface roughness, etc).

The providing dimensions for an apparatus is a fundamental engineering skill and is part of applying the disclosures of patents, which rarely give specific dimensions. Furthermore, it was held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a

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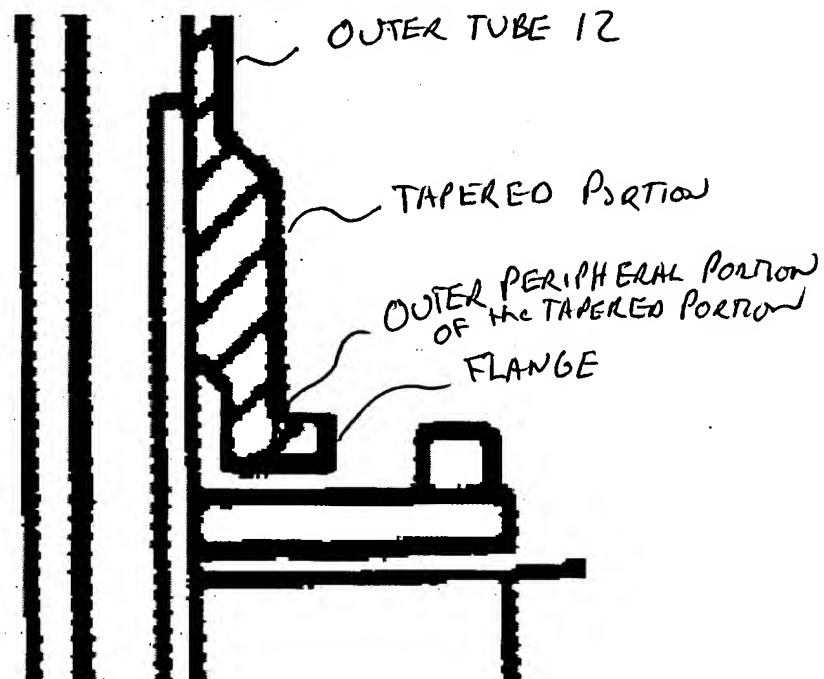
recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. (Also see MPEP

2144.04.IV.A) If the apparatus of Beatty et al were made to the dimensions taught in the specification, it would have all of the claimed ratios.

The motivation for making the apparatus of Beatty et al to the specific dimensions of the specification is to provide specific dimensions from which to manufacture the apparatus of Beatty et al as required by Beatty et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide specific dimension from which to manufacture the apparatus of Beatty et al.

Blown up portion of figure 2



Response to Arguments

5. Applicant's arguments filed January 12, 2006 have been fully considered but they are not persuasive.

In regard to the arguments directed to the combination of Shiozawa and Beatty et al, the Examiner disagrees. Both SiO₂ and SiC are commonly used to make the outer tubes of a thermal treatment system. Beatty et al clearly teaches the use of SiC in the outer tube of a thermal treatment system. Thus, it would be obvious to one of ordinary skill in the art to use SiC in place of SiO₂ in the construction of an outer tube.

In regard to the argument that:

That is, the lower portion which includes the tapered portion has a thickness t_a , the tapered portion is expanding the inner diameter, and the flange is formed on an outer peripheral side of the lower portion. Thus, the tapered portion of the lower portion forms an angle of less than 90° in the inside with respect to the surface of the base and an angle of more than 90° on the outside (see Appendix A). On the other hand, the tube shown in Beatty et al. has a "tapered" portion which has a different thickness from the rest of the tube, i.e., the "tapered" portion of Beatty et al. is made thicker than the rest of the tube. As such, it is believed that excessive stress is exerted on the thicker portion of the Beatty et al. tube, making it less durable. Furthermore, the tube shown in Beatty et al. has the flange and "tapered" portion supporting the tube at the right angle, and thus more stress is believed to be concentrated toward the flange as shown in Figure 4, making it more likely to be broken. Therefore, it is respectfully submitted that the structure recited in amended Claim 1 is believed to be distinguishable from Beatty et al.

The Examiner disagrees for the following reasons:

- 1) Where t_a is measured from is not specified.
- 2) The ranges in which t_a is used are so large that doubling the thickness of t_a would not necessarily move the ratio out of the claimed range.
- 3) The angle of the flange to the base is not claimed.
- 4) The durability of the base is not claimed.
- 5) The Applicant has not provided any evidence to support the arguments "it is believed that excessive stress is exerted on the thicker portion of the Beatty et al.

tube, making it less durable" and "thus more stress is believed to be concentrated toward the flange".

6) The outer tube of figure 4 is not the same as the outer tube of Beatty et al.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention. The cited art contains patents that could be used to reject the claims under 35 USC § 103. These rejections have not been made because they do not provide any additional or different teachings, and if they were applied, would have resulted in an undue multiplication of references. (See MPEP 707.07(g)) Yamaga et al, US Patent 5,578,132 (figure 11) and Ahlgren, US Patent 4,985,281 could be used to make rejections similar to the rejection under Beatty et al.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

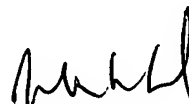
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (10:00 am - 9:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
7/9/07